

**Preliminary Amendment filed January 23, 2006  
U.S. Patent Application Serial No. 09/743,531**

**REMARKS**

Claims 2-4 and 6-10 are currently pending. Claims 2-4 and 8-10 are currently being considered, of which claims 2 and 8-10 have been amended herein. Claims 6 and 7 have been withdrawn from consideration.

In the Office Action dated December 2, 2004, the Examiner rejected claims 2, 3(2 or 10), 4(2 or 10), 9, and 10 under the first paragraph of 35 USC 112, as failing to comply with the written description requirement. In particular, the Examiner alleged that phrases including words such as impingement, impinges, and/or impinging do not find support in the originally filed application. In response to this rejection, claims 2, 9, and 10 have been amended to remove such words.

Accordingly, Applicant respectfully submits that this rejection under 35 USC 112 should be withdrawn.

In the Office Action dated December 2, 2004, the Examiner rejected claims 2, 8, and 9 under 35 USC 102(b) as anticipated by USP 2,653,801 (**Fontein**).

Applicant respectfully traverses this rejection under 35 USC 102(b).

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**Fontein** fails to describe, teach, or suggest the following features set forth in claim 2, as amended: "A micro-bubble generating system, comprising a container main unit having an interior space of frusto-conical shape and being closed at one end, ... and a swirling gas-liquid mixture outlet opening at the other end of said interior space and operative to discharge micro-bubbles therefrom, *said interior space having a largest bore diameter substantially equal to a bore diameter of said gas-liquid mixture outlet opening*", in combination with the other claimed features.

**Fontein** fails to describe, teach, or suggest the following features set forth in claim 8, as amended: "A method for micro-bubble generation, using a micro-bubble generating system, which comprises a container main unit having an interior space with a bottom, ... and a swirling gas-liquid mixture outlet opened at a mixture discharge end of the interior space, ... *said interior space having a largest bore diameter substantially equal to a bore diameter of said gas-liquid mixture outlet*", in combination with the other claimed features.

**Fontein** fails to describe, teach, or suggest the following features set forth in claim 9, as amended: "A method for micro-bubble generation, using a micro-bubble generating system, which comprises a container main unit having an interior space with a bottom, ... and a swirling gas-liquid mixture outlet opened at a mixture discharge end of the interior space, ... *said interior space having a largest bore diameter substantially equal to a bore diameter of said gas-liquid mixture outlet*", in combination with the other claimed features.

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Thus, in view of the above, Applicant respectfully submits that this rejection under 35 USC 102(b) should be withdrawn.

In the Office Action dated December 2, 2004, the Examiner rejected claims 3(2 or 10), 4(2 or 10), 8, 9, and 10 under 35 USC 103(a) as obvious over **Fontein**.

Applicant respectfully traverses this rejection under 35 USC 103(a).

**Fontein** fails to describe, teach, or suggest the following features set forth in base claim 2, as amended: "A micro-bubble generating system, comprising a container main unit having an interior space of frusto-conical shape and being closed at one end, ... and a swirling gas-liquid mixture outlet opening at the other end of said interior space and operative to discharge micro-bubbles therefrom, *said interior space having a largest bore diameter substantially equal to a bore diameter of said gas-liquid mixture outlet opening*", in combination with the other claimed features.

**Fontein** fails to describe, teach, or suggest the following features set forth in base claim 8, as amended: "A method for micro-bubble generation, using a micro-bubble generating system, which comprises a container main unit having an interior space with a bottom, ... and a swirling gas-liquid mixture outlet opened at a mixture discharge end of the interior space, ... *said interior space having a largest bore diameter substantially equal to a bore diameter of said gas-liquid mixture outlet*", in

combination with the other claimed features.

**Fontein** fails to describe, teach, or suggest the following features set forth in base claim 9, as amended: "A method for micro-bubble generation, using a micro-bubble generating system, which comprises a container main unit having an interior space with a bottom, ... and a swirling gas-liquid mixture outlet opened at a mixture discharge end of the interior space, ... *said interior space having a largest bore diameter substantially equal to a bore diameter of said gas-liquid mixture outlet*", in combination with the other claimed features.

**Fontein** fails to describe, teach, or suggest the following features set forth in base claim 10, as amended: "A micro-bubble generating system, comprising: a container having an interior space defined by a surface of revolution, a container bottom closing said space at one axial end thereof and a gas-liquid mixture outlet opening at the other end thereof, *said interior space having a largest bore diameter substantially equal to a bore diameter of said gas-liquid mixture outlet opening*", in combination with the other claimed features.

Thus, in view of the above, Applicant respectfully submits that the rejection under 35 USC 103(a) should be withdrawn.

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The specification has been amended to facilitate understanding, by changing "installed in the liquid" to --submerged in the liquid--.

All amendments herein are supported by the subject application as originally filed.

Regarding the amendments to claims 2 and 8-10 relating to bore diameter, see Figure 1(a), Substitute Specification on page 8 (lines 8-12), and Substitute Specification on page 11 (starting at line 5), for example.

In view of the aforementioned amendments and accompanying remarks, all claims currently being considered are believed to be in condition for allowance, which action, at an early date, is respectfully requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due now or in the future with respect to this application, to Deposit Account No. 01-2340.

Respectfully submitted,

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